Computer Vision, Graphics, and Image Processing

EDITORS
Linda G. Shapiro
Norman Badler
Herbert Freeman
Thomas S. Huang
Azriel Rosenfeld

AN INTERNATIONAL JOURNAL

VOLUME 28, 1984

ACADEMIC PRESS, INC.
(Harcourt Brace Jovanovich, Publishers)
San Diego Orlando New York London
Toronto Montreal Sydney Tokyo

Copyright © 1984 by Academic Press, Inc.
All rights reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (21 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1984 articles are as shown on the article title pages; if no fee code appears on the title page, the copy fee is the same as for current articles.

0734-189X/84 $3.00

MADE IN THE UNITED STATES OF AMERICA

CONTENTS OF VOLUME 28

Number 1, October 1984

Sterling J. Crabtree, Jr., Robert Ehrlich, and Christopher Prince. Evaluation of Strategies for Segmentation of Blue-Dyed Pores in Thin Sections of Reservoir Rocks 1

W. E. L. Grimson. Binocular Shading and Visual Surface Reconstruction 19

Markku Tamminen. Encoding Pixel Trees 44

L. Ferrari, P. V. Sankar, and J. Sklansky. Minimal Rectangular Partitions of Digitized Blobs 58

T. W. Sederberg, D. C. Anderson, and R. N. Goldman. Implicit Representation of Parametric Curves and Surfaces 72

D. A. Fogg. Contour to Rectangular Grid Conversion Using Minimum Curvature . . 85

H. Edelsbrunner, M. H. Overmars, and R. Seidel. Some Methods of Computational Geometry Applied to Computer Graphics 92

David W. Capson. An Improved Algorithm for the Sequential Extraction of Boundaries from a Raster Scan 109

Note

C. K. Wu, D. Q. Wang, and R. K. Bajcsy. Acquiring 3-D Spatial Data of a Real Object 126

Erratum

Volume 23, Number 3, September 1983: Larry S. Davis, Zhongquan Wu, and Hanfang Sun, "Contour-Based Motion Estimation," pp. 313–326 134

Abstracts of Papers Accepted for Publication 135

Number 2, November 1984

Claudio Montani. Region Representation: Parallel Connected Stripes 139

H. Bieri and W. Nef. Algorithms for the Euler Characteristics and Related Additive Functionals of Digital Objects 166

A. Venot, J. F. Lebruchec, and J. C. Roucayrol. A New Class of Similarity Measures for Robust Image Registration 176

Zhisheng You and Anil K. Jain. Performance Evaluation of Shape Matching via Chord Length Distribution 185

Mohan M. Trivedi, Charles A. Harlow, Richard W. Conners, and Semoon Goh. Object Detection Based on Gray Level Cooccurrence 199

KARIN WALL AND PER-ERIK DANIELSSON. A Fast Sequential Method for Polygonal Approximation of Digitized Curves 220

K. P. LAM. Position Determination Using Generalized Multidirectional Gradient Codes 228

SURVEY

MORTON NADLER. Document Segmentation and Coding Techniques 240

NOTE

V. MEDEK. Culling Hidden Edges of Rectangular Parallelepipeds 263

ABSTRACTS OF PAPERS ACCEPTED FOR PUBLICATION 269

NUMBER 3, DECEMBER 1984

HEINRICH BLEY. Segmentation and Preprocessing of Electrical Schematics Using Picture Graphs 271

SEIJI ISHIKAWA. Reconstructing Faces on a Polyhedron from Apparent Gradients of Edges 289

P. A. KOPARKAR AND S. P. MUDUR. Computational Techniques for Processing Parametric Surfaces 303

JOHN F. O'CALLAGHAN AND DAVID M. MARK. The Extraction of Drainage Networks from Digital Elevation Data 323

MUBARAK A. SHAH AND RAMESH JAIN. Detecting Time-Varying Corners 345

MICHAEL H. BRILL. Physical and Informational Constraints on the Perception of Transparency and Translucency 356

RANGACHAR KASTURI, JOHN F. WALKUP, AND THOMAS F. KRILE. Image Restoration in Signal-Dependent Noise Using a Markovian Covariance Model 363

NOTES

MAREK DOROS. On Some Properties of the Generation of Discrete Circular Arcs on a Square Grid 377

THOMAS C. HENDERSON. A Note on Discrete Relaxation 384

AUTHOR INDEX FOR VOLUME 28 389